REMARKS

Claims 1-50 were pending in this application and presently stand rejected or objected to. Claims 51-56 are new. Based on the above amendments and the following remarks, reconsideration and allowance of this application is respectfully requested.

Claim Objections

Claims 8, 38, and 48 have been objected to on the basis of informalities. In particular, the Office Action questions why an activity would be divided by a constant if the activity counter is used to count the unassigned variables and is incremented each time an unassigned variable appears. Applicants respectfully note that in fact, the activity counter may be incremented, for example, when the variable appears in a clause involved in a conflict. There are numerous reasons for dividing the activity counter. For example, the activity counter may be divided by a constant to avoid using variables with obsolete activity levels.

Claims 18 and 21 have been objected to on the basis of informalities. In particular, the Office Action questions how the conflict clause can be removed from the top as well as the top of the storage structure (stack). Applicants respectfully note that paragraphs 24-26 explicitly describe embodiment(s) in which the conflict clauses are removed from either the bottom or the top of a stack.

Claim Rejection 35 U.S.C. §102

Claim 25 has been rejected under 35 USC 112 as failing to comply with the written description requirement. Claim 25 has been amended to address the claim rejection and it is respectfully submitted that the amended claim meets the written description requirement.

Claim Rejections-35 U.S.C. §102

Claims 1-7, 9-17, 21, 24-29, 31-37, 49, and 50 have been rejected under 35 USC 102(b) as being anticipated by Marques-Silva ("GRASP: A Search Algorithm for Propositional Satisfiability"). Applicants respectfully submit that the pending claims are not anticipated or rendered obvious by the Marques-Silva reference.

As amended, claim 1 recites at least the following claim elements (Emphasis added):

(a)   organizing a plurality of clauses in a satisfiability problem as a chronologically ordered structure comprising a top and a bottom, wherein newly deduced conflict clauses are added to the top of the structure, and maintaining individual activity counters for variables in the plurality of clauses;

(b)   selecting a branching variable from a plurality of unassigned variables in the satisfiability problem, in which the branching variable is selected by selecting a clause and an active variable from the clause based upon the activity counter;

Applicants respectfully submit that Marques-Silva does not anticipate claim 1 for at least the reason that Marques-Silva does not disclose the claim elements "maintaining individual activity counters for variables in the plurality of clauses" and "selecting a branching variable from a plurality of unassigned variables in the satisfiability problem, in which the branching variable is selected by selecting a clause and an active variable from the clause based upon the activity counter".

Marques-Silva is directed to a search algorithm for addressing SAT problems. In particular, Marques-Silva discloses a procedure for handling conflict analysis in SAT algorithms. In section 2, Marques-Silva provides an approach for implementing backtrack search to implement a procedure for addressing conflicts.

However, Marques-Silva fails to teach, disclose or suggest the use of any individual activity counters for variables in clauses. In fact, Marques-Silva is completely silent regarding the use of any activity counters at all.

This is in sharp contrast to claim 1, which explicitly recites the act of maintaining individual activity counters for variables in the plurality of clauses. Since Marques-Silva does not disclose activity counters, Marques-Silva cannot disclose the act of selecting a branching variable by selecting a clause and then using the activity counter to select an active variable from the clause as presentably claimed.

The Office Action at page 4 indicates that Section 2.5, page 509 of Marques-Silva discloses an activity counter, with the value "d" being an activity counter since it is asserted to increment each time the search function is called.

Applicants respectfully note that the value "d" is not an activity counter. Instead, it is merely the binary tree level ("decision level") at which the search function is operating. Moreover, the present claim 1 recites maintaining individual activity counter for variables, with different activity counters for different variables. Since the value "d" in Marques-Silva is directed decision levels for the search function rather than to variables, it is not and cannot be individually maintained for variables as is presently claimed.
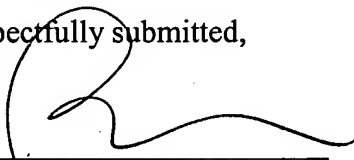
For at least this reason, Applicants respectfully submit that claim 1 is allowable over the Marques-Silva reference. For at least this same reason, Applicants submit that pending claims 31 and 41 are allowable as well. Therefore, Applicants respectfully submit that dependent claims 2-30, 32-40, and 42-56 are allowable as well.

CONCLUSION

Based on the foregoing, it is believed that, with entry of this amendment, all claims are now allowable and a Notice of Allowance is respectfully requested. If the Examiner has any questions or comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at (650) 849-4870.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. **50-2518,** referencing billing number **7031402001**. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. **50-2518,** referencing billing number **7031042001**.

Respectfully submitted,

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